

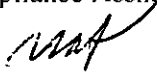
**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

DATE: MAY 20 2014

SUBJECT: G & S Foundry & Manufacturing Company
210 Kaskaskia Drive, Red Bud, Illinois 62278

FROM: Dakota Prentice, Environmental Engineer
Air Enforcement and Compliance Assurance Section (IL/IN)

Monica Onyszko, Environmental Engineer
Air Enforcement and Compliance Assurance Section (IL/IN)

THRU: Nathan Frank, Chief 
Air Enforcement and Compliance Assurance Section (IL/IN)

TO: File

1. INSPECTION OVERVIEW

Name

G & S Foundry & Manufacturing Company

Location

210 Kaskaskia Drive, Red Bud, Illinois 62278

Inspection Date

April 21, 2014

Attendees

Monica Onyszko, EPA, Environmental Engineer
Dakota Prentice, EPA, Environmental Engineer
Brad Chandler, G & S Foundry & Manufacturing Company, Manufacturing Manager
Ronald Speiser, G & S Foundry & Manufacturing Company, Quality Engineer

Company Contact

Donna Dungan
Office Manager
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Company Overview

G & S Foundry & Manufacturing Company ("G&S") operates a foundry ("the facility"), which produces mainly iron castings, as well as, aluminum, brass, and bronze castings for various industries including the oil and gas industry.

Environmental Justice

The EPA uses a nationally consistent environmental justice screening tool (EJSCREEN) to identify areas with potentially disproportionately high environmental and public health burdens. It combines a set of indicators in the categories of health, environment, and social demographics, to identify, in an analytically rigorous and consistent manner, potential disproportionately and adversely affected areas. According to the EJSCREEN, G&S is not located in an EJ area based on the 12 Primary EJ Indexes.

Regulatory Overview

The facility is considered a true minor source under the Clean Air Act (CAA). G&S operates under a Lifetime Operating Permit, Applicant No. 93060005, issued on August 12, 2004. This permit was issued by Illinois Environmental Protection Agency (IEPA).

The facility may be subject to the New Source Performance Standards for Iron and Steel Foundries Area Sources at 40 C.F.R. Part 63, Subpart ZZZZZ (NESHAP ZZZZZ). The facility's Lifetime Operating Permit was issued prior to promulgation of NESHAP ZZZZZ, on January 2, 2008 (73 Fed. Reg. 252), and facility personnel were unable to provide information regarding applicability of NESHAP ZZZZZ.

2. ARRIVAL AND OPENING CONFERENCE

We (Monica Onyszko and Dakota Prentice of EPA) arrived at the G&S facility located in Red Bud, Illinois at approximately 3:00 PM on April 21, 2014. We notified facility personnel of our presence and requested to speak to someone regarding environmental compliance. We were led to a conference room where we were met by Brad Chandler, Manufacturing Manager, and Ronald Speiser, Quality Engineer. We introduced ourselves and stated the purpose of our visit was to determine the facility's compliance with the CAA and the facility's operating permit issued by IEPA. We showed Mr. Chandler and Mr. Speiser our credentials and started the opening conference.

We told Mr. Chandler and Mr. Speiser that we wanted a process based overview of operations at the facility, focusing on air emissions and pollution control equipment, and a plant tour. We informed them that we would end the inspection with a closing conference. We explained that if we discussed anything they considered confidential business information (CBI), they should let us know and we would treat it as such.

Due to our late arrival at the facility, we requested that the inspection begin with the site tour as Mr. Chandler stated that furnace operations were expected to cease operations shortly after our arrival. Upon returning from the site tour we proceeded with background information and a process overview.

Mr. Chandler provided limited background on facility operations. The facility was built in and has been in operation since 1994, while the company has been in operation since the early 1950s. The majority of furnaces at the facility were brought there from the old facility. The facility is a sole proprietorship; however, the machine shop and its workers are technically a separate company. The facility has approximately 100 employees and currently operates five days per week. Generally, furnace operations run for one shift per day and machine shop operations run for two shifts per day. The facility is a low-to-mid volume "job shop."

Process Overview

Casting production begins with charging material into furnaces. The facility currently has five iron furnaces and two aluminum furnaces in regular operation. All furnaces use electric induction heating elements. Mr. Chandler stated that the facility refers to the furnaces as "boxes."

Mr. Chandler stated that the facility has five iron furnaces; however, only four can be operated at a time based on how the power supply is set up. Mr. Chandler stated that three iron furnaces are 2,000 pound (lb) capacity furnaces and two are 500 lb capacity furnaces. The cycle time is approximately 600 lbs every 15 – 20 minutes for the larger furnaces. The iron furnaces are charged with various combinations of steel bushings, pig iron, carbon, silica, and trace elements (including stainless steel). The facility also produces inoculated iron (ductile iron) by adding a ferro-silicon product. We received a copy of the material safety data sheet (MSDS) for this product, which is known as Alloy 41 or ELMAG 4010. One iron furnace is occasionally used for brass and bronze production and is referred to in the Lifetime Operating Permit as a brass and bronze induction melting furnace controlled by a dust collector. It is a 2,000 lb capacity furnace. The emissions from all five furnaces are uncontrolled.

The facility has two operating aluminum furnaces. The Lifetime Operating Permit states that the facility has eight aluminum furnaces. Mr. Chandler stated that due to the loss of a customer, there has been a significant drop in demand for aluminum castings and therefore only two aluminum furnaces are operational. The furnaces melt aluminum ingots produced at other facilities for the production of castings. The facility melts about 3,000 lbs per year of Aluminum Alloy 356 and, more rarely according to Mr. Chandler, about 5,000 lbs per year of Aluminum Alloy 353. G&S does not perform any metallurgical modification of the aluminum in the furnaces. The aluminum furnaces are uncontrolled.

The facility has a green sand molding operation to produce the sand molds used to produce the final casting shape. The green sand is a mixture of sand, a volatile organic compound binder, wood flour, sea coal, and bentonite. After the molten metal has been poured into a mold and cooled, it moves to a casting shakeout unit. This unit removes the sand from the casting through vibration. Emissions from this unit are controlled by a baghouse. Some spent sand ends up in a G&S lot as fill. We asked for a copy of the binder MSDS and received it later in the inspection.

Once the casting has been removed from the mold, finishing work is performed as needed based on the needs of the customer. The facility has three shot blast units, each controlled by their own baghouse. The shot blast units are not included in the Lifetime Operating Permit. When asked how the facility monitors performance of the shot blast baghouses, Mr. Chandler stated that when they observe metallic fines on the roof or on cars parked at the facility they assume there is a hole in a bag and then open the baghouse and replace bags as needed. There is no monitoring gauge on the baghouses. The baghouses were built in 1952. There are also machining/grinding operations and one paint booth for coating operations. One paint is used in the paint booth, and we asked for the MSDS and received it later in the inspection. The final product is then shipped to customers.

In terms of maintenance, Mr. Chandler said that refractory in the iron furnaces is changed out every 5 – 6 weeks. The aluminum furnaces have crucibles that last one to two years. There are no plans to bring the out-of-commission furnaces back to use.

We asked about production at the facility, and Mr. Chandler estimated that it is about 250 – 300 tons per month.

With regards to how the facility has changed, Mr. Chandler said that they used to incinerate wood at their site, but have stopped due to neighbor complaints. Now they landfill their wood waste. The brass and bronze furnace used to have a hood and a dust collection system, but it doesn't anymore.

We asked if there were plans to update their Lifetime Operating Permit, but Mr. Chandler was not sure if they had a permit renewal request at IEPA. He did know that they submit quarterly and annual reports to IEPA. Mr. Chandler also did not know if the facility was subject to NESHAP ZZZZZ.

3. SITE TOUR

We started the tour of the facility prior to the process overview explanation, at approximately 3:25 PM. The facility tour was provided by Mr. Chandler and Mr. Speiser. We started in the furnace room and were shown what were described as five iron furnaces and seven aluminum furnaces. Certain furnaces were in various stages of operation. Mr. Chandler stated that only two aluminum furnaces are currently operated. This portion of the facility also had casting shakeout operations. While in the furnace room, Mr. Prentice noted that roof vents and associated fans were open and operating, respectively. Overhead doors in the furnace room were also open to the exterior.

We were also shown a green sand molding operation and the grinding and finishing portion of the facility. Mr. Chandler stated that the facility has four baghouses. One baghouse is dedicated to casting shakeout operations and three baghouses are used for three shot blast units.

We went to the machining operations area. The machine shop was expanded in 2008.

We were shown the exterior of the facility where Mr. Chandler stated that used sand from molds was used as fill material on the property. Mr. Chandler stated that G&S has a permit from IEPA for this activity. Buildings can be built on this fill.

While outside, we saw the baghouse that is no longer operational. Mr. Chandler said that he wasn't sure what that baghouse controlled, but it may have been the tumble mill, which is no longer at the facility.

Back inside, we walked past the only paint booth at the facility. It was not in operation, though parts were drying near it.

4. CLOSING CONFERENCE

Following completion of the process overview we told Mr. Chandler and Mr. Speiser that we may follow-up the inspection with a CAA Section 114 Information Request and that they could contact us directly for a copy of the inspection report. We thanked them for their time and left the plant at approximately 4:40 PM.

Records Obtained

Facility Diagram

MSDS for UNISSET F/X-A - Part1

MSDS for UNISSET F/X-B - Part2

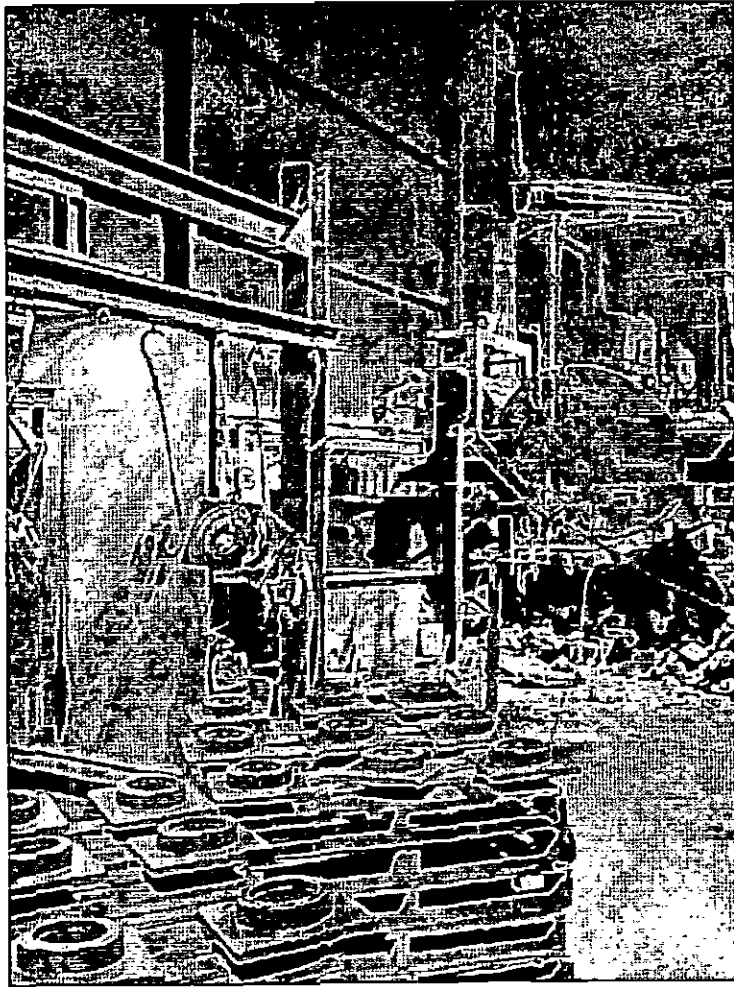
MSDS for KEM-FLASH 500 Primer, Red Oxide
MSDS for Vaxon Inoulcant
MSDS for Alloy 41
Certificate of Analysis for Aluminum Alloy 356.1

Photograph - Attached

1. Iron Furnaces
2. Paint Booth (foreground) and Sand Reclamation Unit (background)



Photograph 1: Iron Furnaces



Photograph 2: Paint Booth (foreground) and Sand Reclamation Unit (background)